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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,614	09/12/2003	Manabu Serizawa	117111	6115

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EXAMINER

RODEE, CHRISTOPHER D

ART UNIT PAPER NUMBER

1756

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/660,614

Applicant(s)

SERIZAWA ET AL.

Examiner

Christopher RoDee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9, 21, and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Amended claim 9 contains new matter as now presented for the formula (1). This formula is not present in the specification as filed for the unsaturated compound having a double bond (see spec. p. 12). Consequently, the claim is not described within the meaning of section 112, first paragraph.

New claims 21 and 22 are not described by the specification as filed because there is no disclosure of the newly recited lower limit of greater than 210 Pa for the storage elastic modulus at 160 °C. Various storage elastic moduli are disclosed in Table 1, p. 155, but there is no disclosure of the current range, particularly the now recited lower limit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 8-15, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayase *et al.* in US Patent 6,002,903 in view of Takenouchi *et al.* in US Patent 5,273,852.

Hayase discloses a method of imaging using a toner having a resin and coloring agent. The toner has a storage elastic modulus at 155 °C of 4900 to 47000 dyn/cm² (490 to 4700 Pa) as seen in Table 7. Exemplified toner 15 (Example 12) is 6.7 microns in diameter and has 14 parts of a cyan colorant, 200 parts of a styrene-butyl acrylate binder resin, 0.5 parts of a crosslinking agent, and 2 parts of charge control agent. This toner is then mixed with 1.5 parts silica as external additives (see Example 1). Toner 15 has a storage elastic modulus at 155 °C of 490 Pa (see Table 7; col. 33). The toner has a SF-1 shape factor of 100 to 150 (Abstract) with 105 exemplified for Toner 15. Other exemplified SF-1 shape factors are 110 for Toner 14 and 11 for Toner 13 (Table 7).

The toner is used in an image forming method comprising forming an electrostatic image on an image-bearing member (i.e., a photoreceptor); developing the electrostatic image with a toner having a triboelectric charge to form a toner image; transferring the toner image onto a transfer material via or without via an intermediate transfer member; and fixing the toner image onto the transfer member under application of heat and pressure (see patent claim 34). The method is conducted by an image forming apparatus (col. 4, l. 4-24; col. 5, l. 1-23).

Hayase does not specify the photoreceptor in the imaging apparatus, but Takenouchi discloses a useful photoreceptor for an imaging apparatus (col. 22, l. 5-8). The photoreceptor has a conductive support, 0.2 micron-thick charge generation layer, and a 20 micron-thick charge transport layer containing a silane polymer and a charge transport material given by the

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formula (2) (col. 2, l. 36-col. 3, l. 3; col. 9, l. 8-21; col. 10, l. 10+; Figures). This charge transport compound has unsaturated groups and is shown by the reference to be well known in the art. The photoreceptor may also contain an antioxidant to prevent deterioration (col. 20, l. 39-51). The photoreceptor provides with excellent flexibility, hole transport characteristics, and mechanical strength while having a quick copying capability (col. 2, l. 36-46) in imaging processes.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the photoreceptor of Takenouchi in the method of Hayase as the imaging-bearing member because Takenouchi teaches the use of its toner in an imaging process using an imaging apparatus and Takenouchi discloses a specific photoreceptor with excellent flexibility, hole transport characteristics, and mechanical strength while having a quick copying capability (col. 2, l. 36-46). The artisan would have found it obvious to optimize the size of the external additives in order to ensure proper fluidity of the toner composition. Given the disclosed storage modulus at 155 °C of 490 Pa for Toner 15, the artisan would expect the toner to inherently have a slightly smaller storage modulus (G') at 160 °C, particularly in view of storage modulus of 100 Pa at 190 °C. These two values show a general decrease of G' over the temperature range, which would indicate to the artisan that the value of G' near 160 °C is still within the scope of the claimed values. There is no reason present in the art to suggest that G' would drop substantially in the 5 °C span to 160 °C such that the value would be below 210 Pa or 150 Pa, as required by the claims.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayase *et al.* in US Patent 6,002,903 in view of Takenouchi *et al.* in US Patent 5,273,852 as applied to claims 1-

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6, 8-15, 21, and 22 above, and further in view of *Handbook of Imaging Materials* to Diamond, pp. 160-162 & 178.

Hayase and Takenouchi were described above. The references do not specify the particle size distribution of the toner, but Diamond teaches that a narrow toner particle size distribution is desired. Too broad a distribution will result in dirt in the machine environment as well as reduce copy quality. It is apparent from this discussion that the particle size distribution is a result-affecting variable and that the distribution should be minimized, giving a small numerical value for distribution.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to produce the toner of Hayase with a narrow particle size distribution, which is numerically defined in the instant claims, because Diamond teaches that a broad distribution results in a dirt in the machine environment as well as reduce copy quality.

Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayase *et al.* in US Patent 6,002,903 in view of Takenouchi *et al.* in US Patent 5,273,852, as applied to claims 1-6, 8-15, 21, and 22 above, and further in view of Heeks *et al.* in US Patent 6,336,026.

Hayase and Takenouchi were described above. The references do not disclose the transfer material, such as when using an intermediate transfer member, which is suggested by Hayase's method. However, Heeks teaches an intermediate transfer member having a multilayer construction and a fluorosilicone as the surface layer (col. 6, l. 55-64; col. 12, l. 11-24). The transfer layer can also contain conductive particles to control the conductivity of the surface layer (col. 13, l. 62 – col. 14, l. 29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an intermediate transfer layer as discussed in Heeks in the imaging

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process of Hayase because this member gives a high image registration system in color imaging systems, such as used by Hayase, with the specific advantages discussed in the passage spanning columns 5 and 6.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdr
17 October 2005



CHRISTOPHER RODEE
PRIMARY EXAMINER